

Appl. No. 09/549,967
Amdt. dated June 24, 2004
Reply to Office Action of March 24, 2004

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Amendments to the Claims:

Claims 22, 25, 28-29, 35, 41, and 47 have been amended. Claims 26-27, 33, 34, 39, 40, 45, and 46 have been canceled without prejudice. New claims 48-50 have been added. This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. - 21. (Cancelled).

1 22. (Currently Amended) A method for copying a multi-page document
2 comprising:
3 scanning in a plurality of document pages to capture image data for each of the
4 plurality of pages;
5 storing the image data for each of the plurality of pages; and
6 comparing, using a distance metric, the image data for each of the plurality of
7 pages to identify twice scanned pages, wherein the distance metric is at least one of a Hausdorff
8 distance metric and an Euclidean distance metric.

1 23. (Previously Presented) The method of claim 22 further comprising:
2 displaying a warning message upon identifying a twice scanned page during the
3 comparison.

1 24. (Previously Presented) The method of claim 22 further comprising:
2 printing copies of the plurality of pages based on the image data, wherein for each
3 twice scanned page identified in the comparing step, a single copy is printed.

1 25. (Currently Amended) A copier comprising:
2 a scanner configured to scan a plurality of pages to capture image data for each
3 page of the plurality of pages;
4 a feature extractor module configured to extract a feature set for each page of the
5 plurality of pages from the image data for the page;

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6 a comparator module configured to perform comparisons, using a distance metric,
7 between the extracted feature sets for the plurality of pages to identify pages from the plurality of
8 pages which have been scanned more than once, wherein the distance metric is at least one of a
9 Hausdorff distance metric and an Euclidean distance metric; and

10 a printing module configured to print the plurality of pages based on the image
11 data for the pages, wherein a single copy is printed for image data corresponding to the pages
12 which have been scanned more than once.

1 26. (Canceled)

1 27. (Canceled)

1 28. (Currently Amended) The ~~method~~ copier of claim 25 wherein the feature
2 set for each page from the plurality of pages comprises CCITT Group IV pass codes.

1 29. (Currently Amended) An apparatus for performing a first function on a
2 plurality of pages, the apparatus comprising:
3 a scanner configured to scan the plurality of pages to capture image data for each
4 page of the plurality of pages;
5 a feature extractor module configured to extract a feature set for each page of the
6 plurality of pages from the image data for the page;
7 a comparator module configured to perform comparisons, using a distance metric,
8 between the extracted feature sets for the plurality of pages to identify pages from the plurality of
9 pages which have been scanned more than once, wherein the distance metric is at least one of a
10 Hausdorff distance metric and an Euclidean distance metric; and
11 a function module configured to perform the first function on the plurality of
12 pages based on the image data for the pages, wherein the first function is performed once on
13 image data corresponding to the pages which have been scanned more than once.

1 30. (Previously Presented) The apparatus of claim 29 wherein the first
2 function comprises copying the plurality of pages.

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1 31. (Previously Presented) The apparatus of claim 29 wherein the first
2 function comprises faxing the plurality of pages.

1 32. (Previously Presented) The apparatus of claim 29 wherein the first
2 function comprises communicating the plurality of pages via a communication link.

1 33. (Canceled)

1 34. (Canceled)

1 35. (Currently Amended) A method of performing a first function on a
2 plurality of pages, the method comprising:
3 scanning the plurality of pages to capture image data for each page of the plurality
4 of pages;
5 extracting a feature set for each page of the plurality of pages from the image data
6 for the page;
7 performing comparisons, using a distance metric, between the extracted feature
8 sets for the plurality of pages to identify pages from the plurality of pages which have been
9 scanned more than once, wherein the distance metric is at least one of a Hausdorff distance
10 metric and an Euclidean distance metric; and
11 performing the first function on the plurality of pages based on the image data for
12 the pages, wherein the first function is performed once on image data corresponding to the pages
13 which have been scanned more than once.

1 36. (Previously Presented) The method of claim 35 wherein performing the
2 first function comprises printing a single copy of the image data corresponding to the pages
3 which have been scanned more than once.

1 37. (Previously Presented) The method of claim 35 wherein performing the
2 first function comprises faxing a single copy of the image data corresponding to the pages which
3 have been scanned more than once.

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1 38. (Previously Presented) The method of claim 35 wherein performing the
2 first function comprises communicating a single copy of the image data corresponding to the
3 pages which have been scanned more than once.

1 39. (Canceled)

1 40. (Canceled)

1 41. (Currently Amended) A computer program product stored on a computer-
2 readable medium for performing a first function on a plurality of pages, the computer program
3 product comprising:
4 code for scanning the plurality of pages to capture image data for each page of the
5 plurality of pages;
6 code for extracting a feature set for each page of the plurality of pages from the
7 image data for the page;
8 code for performing comparisons, using a distance metric, between the extracted
9 feature sets for the plurality of pages to identify pages from the plurality of pages which have
10 been scanned more than once, wherein the distance metric is at least one of a Hausdorff distance
11 metric and an Euclidean distance metric; and
12 code for performing the first function on the plurality of pages based on the image
13 data for the pages, wherein the first function is performed once on image data corresponding to
14 the pages which have been scanned more than once.

1 42. (Previously Presented) The computer program product of claim 41
2 wherein the code for performing the first function prints a single copy of the image data
3 corresponding to the pages which have been scanned more than once.

1 43. (Previously Presented) The computer program product of claim 41
2 wherein the code for performing the first function faxes a single copy of the image data
3 corresponding to the pages which have been scanned more than once.

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1 44. (Previously Presented) The computer program product of claim 41
2 wherein the code for performing the first function communicates a single copy of the image data
3 corresponding to the pages which have been scanned more than once via a communication link.

1 45. (Canceled)

1 46. (Canceled)

1 47. (Currently Amended) A computer program product stored on a computer-
2 readable medium for copying a multi-page document, the computer program product comprising:
3 code for scanning in a plurality of document pages to capture image data for each
4 of the plurality of pages;
5 code for storing the image data for each of the plurality of pages; and
6 code for comparing, using a distance metric, the image data for each of the
7 plurality of pages to identify twice scanned pages-, wherein the distance metric is at least one of
8 a Hausdorff distance metric and an Euclidean distance metric.

1 48. (New) A copier comprising:
2 a scanner configured to scan a plurality of pages to capture image data for each
3 page of the plurality of pages;
4 a feature extractor module configured to extract a feature set for each page of the
5 plurality of pages from the image data for the page, the feature set comprising CCITT Group IV
6 pass codes;
7 a comparator module configured to perform comparisons between the extracted
8 feature sets for the plurality of pages to identify pages from the plurality of pages which have
9 been scanned more than once; and
10 a printing module configured to print the plurality of pages based on the image
11 data for the pages, wherein a single copy is printed for image data corresponding to the pages
12 which have been scanned more than once.

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- 1 49. (New) An apparatus for performing a first function on a plurality of
2 pages, the apparatus comprising:
3 a scanner configured to scan the plurality of pages to capture image data for each
4 page of the plurality of pages;
5 a feature extractor module configured to extract a feature set for each page of the
6 plurality of pages from the image data for the page, the feature set comprising CCITT Group IV
7 pass codes;
8 a comparator module configured to perform comparisons between the extracted
9 feature sets for the plurality of pages to identify pages from the plurality of pages which have
10 been scanned more than once; and
11 a function module configured to perform the first function on the plurality of
12 pages based on the image data for the pages, wherein the first function is performed once on
13 image data corresponding to the pages which have been scanned more than once.
- 1 50. (New) A method of performing a first function on a plurality of pages, the
2 method comprising:
3 scanning the plurality of pages to capture image data for each page of the plurality
4 of pages;
5 extracting a feature set for each page of the plurality of pages from the image data
6 for the page, the feature set comprising CCITT Group IV pass codes;
7 performing comparisons between the extracted feature sets for the plurality of
8 pages to identify pages from the plurality of pages which have been scanned more than once; and
9 performing the first function on the plurality of pages based on the image data for
10 the pages, wherein the first function is performed once on image data corresponding to the pages
11 which have been scanned more than once.

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